

**Faculty of Agriculture
Goce Delcev University - Stip**



**2nd INTERNATIONAL MEETING
AGRISCIENCE & PRACTICE
(ASP 2019)**

BOOK OF ABSTRACTS

**12th April 2019
Stip, Republic of North Macedonia**

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**2nd INTERNATIONAL MEETING AGRISCIENCE & PRACTICE
ASP 2019**

Organized by

**FACULTY OF AGRICULTURE
GOCE DELCEV UNIVERSITY - STIP, REPUBLIC OF NORTH MACEDONIA
12 April 2019, Stip, Republic of North Macedonia**

In the past twelve years the educational, research and applicative activities of the Faculty of Agriculture – Stip, Goce Delcev University – Stip, contributed to the development of agricultural sector in the country and abroad.

The Faculty of Agriculture organizes the 2nd International Meeting Agriscience & Practice (ASP 2019), giving an opportunity to the participants for presentation and discussion of original scientific and practical results in different fields of agriculture.

The 2nd International Meeting Agriscience & Practice (ASP 2019) is organized with intention to bring together all agricultural stakeholders for sharing their knowledge, experience and obstacles. One of the main aims is to link research and field work in agricultural sector in the country and abroad, giving it an international dimension.

The main goal of the Meeting is to connect and promote scientific achievements and practical knowledge presented in different thematic areas.

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TABLE OF CONTENTS

AGRICULTURAL ECONOMICS	10
INTEGRATING STUDIES AND ENTREPRENEURSHIP. CASE: ELOSA OSK. ANNIKA MICHELSON ..	11
PERSPECTIVES AND POSSIBILITIES FOR DEVELOPMENT OF TOBACCO PRODUCTION IN THE REPUBLIC OF MACEDONIA SILVANA PASOVSKA, TRAJKO MICESKI	12
PLACEMENT OF INFORMATION SYSTEMS IN AGRIBUSINESS GORAN MIHAJLOVSKI.....	13
THE IMPACT OF SOCIAL MARKETING ON IMPROVING CONSUMER AWARENESS OF THE IMPORTANCE OF SPICE IN FOOD MAJA ANGELESKA, KRISTINA J. GACOSKA (NO PARTICIPATION) ..	14
PLANT BIOTECHNOLOGY	15
WASTE MATERIALS DERIVED BIO-EFFECTORS USED AS GROWTH PROMOTERS FOR STRAWBERRY PLANTS. AN AGRONOMIC AND METABOLOMIC STUDY BRANKICA SPASEVA, ZIAD AL CHAMI, SANDRA ANGELICA DE PASCALI, IVANA CAVOSKI, FRANCESCO PAOLO FANIZZI	16
GENETICALLY MODIFIED CROPS - CURRENT STATE, ISSUES AND PERSPECTIVES FIDANKA TRAJKOVA, LILJANA KOLEVA GUDEVA	17
MAIN MOLECULAR MARKERS IN PLANT GENETICS - MINI REVIEW MARIYA TODOROVA ZHELYAZKOVA, SVETLANA YORDANOVA GEORGIEVA, DEYANA GENCHEVA GENCHEVA (NO PARTICIPATION)	18
ASSESSMENT OF ANTIMICROBIAL AND ANTIOXIDANT ACTIVITIES OF <i>NEPETA NUDA</i> PLANT EXTRACTS DETELINA PETROVA, MILENA PETROVA, MARIA ROGOVA, MIROSLAVA ZHIPONOVA, PETIA HRISTOVA, GANKA CHANEVA	20
SPECTROPHOTOMETRIC DETERMINATION OF THE CONTENT OF PHOTOSYNTHETIC PIGMENTS IN SOME DECORATIVE SPECIES GROWN IN <i>IN VITRO</i> AND <i>IN VIVO</i> CONDITIONS IVANA VELESANOVA, FIDANKA TRAJKOVA, LILJANA KOLEVA GUDEVA	21
IMPROVING THE DOMINANCE OF SURFACE DUST ABSORPTION VS. BULK DEPOSITION IN MOSS TISSUE CROSS BIO-INDICATION PROCESS OF METALS DEPOSITION IN ENVIRONMENT BILJANA BALABANOVA, MAJA LAZAROVA, BLAZO BOEV	22
PLANT PRODUCTION	23
BREEDING OF ABIOTIC STRESS IN BARLEY - PROBLEMS, ACHIEVEMENTS AND PERSPECTIVES DRAGOMIR VALCHEV, DARINA VALCHEVA	25
A VIRTUAL PLANT PRODUCTION MANAGEMENT PLATFORM ANNIKA MICHELSON	26
USE OF SEAWEED EXTRACTS IN THE LETTUCE (<i>LACTUCA SATIVA</i> L.) PRODUCTION JOSÉ FILIPE GOMES LOPES; KIRIL BAHCEVANDZIEV, LEONEL PEREIRA	27
NEW PERSPECTIVE MALE STERILE HYBRID LINES OF BURLEY TOBACCO ILIJA RISTESKI KAROLINA KOCOSKA	28
THE SIZE AND NUMBER OF MIDDLE BELT LEAVES IN SOME VARIETIES OF WILD TOBACCO KAROLINA KOCOSKA, ILIJA RISTESKI	29
STUDY OF THE INFLUENCE OF LEAF FERTILIZER PANAMIN AGRO ON PLANT GROWTH, RESISTANCE TO BIOTIC AND ABIOTIC STRESS, PRODUCTIVITY AND QUALITY OF THE GRAIN IN WHEAT AND BARLEY DRAGOMIR VALCHEV, DARINA VALCHEVA.....	30
CHEMICAL COMPOSITION OF OATS GROWN IN CONDITIONS OF ORGANIC PRODUCTION ADRIJANA BUROVSKA, DRAGICA SPASOVA, BILJANA ATANASOVA, DUSAN SPASOV, MITE ILIEVSKI	31
THE INFLUENCE OF ORGANIC FERTILIZERS ON THE GROWTH AND YIELD OF BROCCOLI (<i>BRASSICA OLERACEA</i> L. VAR. <i>ITALICA</i>) DANIELA DIMOVSKA, LJUPCO MIHAJLOV, FIDANKA TRAJKOVA, LILJANA KOLEVA GUDEVA, IGOR ILJOVSKI.....	32
SPECIFICS OF SYMBIOTIC NITROGEN FIXATION IN LEGUMINOUS PLANTS - WITH A VIEW OF CHICKPEA (<i>CICER ARIETINUM</i> L.) MONIKA GLIGOROVA, LJUPCO MIHAJLOV	33
COMPARATIVE STUDY OF HYDROPONICALLY AND AQUAPONICALLY CULTIVATED PLANT SPECIES ALEXANDER TOMOV, DETELINA PETROVA, ANELIYA RAICHEVA, GANKA CHANEVA	34
ASSESSMENT OF AGRO-MORPHOLOGICAL VARIABILITY IN RICE BY MULTIVARIATE ANALYSIS VERICA ILIEVA, NATALIJA MARKOVA RUZDIK, LJUPCO MIHAJLOV, MITE ILIEVSKI.....	35

ARSENIC UPTAKE AND TRANSLOCATION IN SOYBEAN PLANTS IN NEUTRAL SOIL ENVIRONMENT LJUPCO MIHAJLOV, BILJANA KOVACEVIK, NATALIJA MARKOVA RUZDIK, VESNA ZAJKOVA PANEVA.....	36
IMPACT OF SOME HERBICIDES AND HERBICIDE COMBINATIONS ON SOWING CHARACTERISTICS OF CORIANDER (<i>CORIANDRUM SATIVUM</i> L.) GROZI DELCHEV (NO PARTICIPATION)	37
PLANT PROTECTION.....	38
FIRST REPORT OF HEALTH CONDITION OF POTATO SAMPLES FROM BORDER CROSSINGS IN THE REPUBLIC OF NORTH MACEDONIA MAJA PETRUSHEVA, SASA MITREV, EMILIJA ARSOV.....	40
THE IMPACT OF CLIMATE CHANGE ON SHIFT OF PREDOMINANT RUST PATHOGENS IN SERBIA RADOVOJE JEVTIĆ, VESNA ŽUPUNSKI, MIRJANA LALOŠEVIĆ	41
THE USE OF PREDATORS FOR THE CONTROL OF <i>FRANKLINIELLA OCCIDENTALIS</i> (THYSANOPTERA: THRIPIDAE) FOR PEPPER IN PROTECTED AREA DUSAN SPASOV, BILJANA ATANASOVA, DRAGICA SPASOVA, MITE ILIEVSKI	42
<i>PAENIBACILLUS ALVEI</i> DZ-3 WITH HIGH ANTIFUNGAL ACTIVITY PROTECTS APPLE FRUITS AGAINST <i>BOTRYTIS CINEREA</i> GRAY MOLD NATALIJA ATANASOVA-PANCEVSKA, DZOKO KUNGULOVSKI, VIOLETA BOSKOVSKA, IVAN KUNGULOVSKI	43
ONE STEP REAL-TIME POLYMERASE CHAIN REACTION USING FOR THE DETECTION OF <i>PLUM POX POTYVIRUS</i> CVETANKA KULUKOVSKA, EMILIJA ARSOV, SASA MITREV.....	44
PHYTOPLASMA INFECTION CAUSES PHYSIOLOGICAL CHANGES IN SYSTEMIC PEPPER LEAVES MIROSLAVA ZHIPONOVA, GALINA IVANOVA, EMILIJA ARSOV, DETELINA PETROVA, SASA MITREV, GANKA CHANEVA	45
GLOBAL WARMING AND INCREASED INFLUX OF PESTS ON TOBACCO VESNA KRSTESKA, STANISLAVA LAZAREVSKA, PETRE STOJANOSKI	46
PHENOTYPIC AND PATHOGENIC CHARACTERIZATION OF <i>COLLETOTRICHUM</i> SPP. ASSOCIATED WITH BITTER ROT ON APPLE FRUITS IN POST-HARVEST STORAGE BILJANA KOVACEVIK, MITREV SASA.....	47
EFFICACY OF SOME HERBICIDES AND HERBICIDE TANK MIXTURES IN DURUM WHEAT (<i>TRITICUM DURUM</i> DESF.) GROZI DELCHEV (NO PARTICIPATION)	48
QUALITY CONTROL AND FOOD SAFETY	49
INFLUENCE OF DEEP AUTOLYSIS ON THE QUALITY AND SHELF LIFE OF MEAT STEFAN G. DRAGOEV	50
THE INFLUENCE OF DIFFERENT CONCENTRATIONS OF PLANT ESSENTIAL OILS ON GROWTH AND REPRODUCTION OF <i>SALMONELLA ENTERITIDIS</i> JASMINA STOJILJKOVIC, METODIJA TRAJCHEV, MILENA PETROVSKA, DIMITAR NAKOV	51
THE EFFECT OF DIFFERENT STARTER CULTURES ON QUALITY AND SENSORY CHARACTERISTICS ON KASHKAVAL CHEESE GORDANA DIMITROVSKA, MARIJA PETKOVSKA, LJUPCE KOSHOSKI, ELENA JOSHEVSKA, KATERINA BOJKOVSKA	52
ANALYTICAL CHALLENGES IN CHEMICAL CHARACTERIZATION OF MEDICINAL AND AROMATIC PLANTS BILJANA BALABANOVA.....	53
NUTRITIVE AND SENSORY CHARACTERISTICS OF FERMENTED CUCUMBER VALENTINA PAVLOVA, GORDANA ŠEBEK, TATJANA BLAZHEVSKA, LJUBICA KOSTADINOVA.....	54
APPLICABLE GUIDELINES FOR THE EXISTING RULES FOR LABELLING FOOD PRODUCTS JULIJANA SAZDOVA, GORAN ANTONIEVSKI, DEJAN METODIJESKI, ACO KUZELOV	55
CONSUMER PREFERENCES AS DETERMINANT OF THE SUCCESSFUL QUALITY MANAGEMENT OF DAIRY PRODUCTS KATERINA BOJKOVSKA, NIKOLCHE JANKULOVSKI, GORAN MIHAJLOVSKI, ELENA JOSHEVSKA, GORDANA DIMITROVSKA.....	56
APPLICATION OF SPICES IN THE DAIRY INDUSTRY KRISTINA J. GACOSKA, MAJA ANGIJELESKA (NO PARTICIPATION)	57
SENSORY EVALUATION OF PROBIOTIC YOGHURT INOCULATED WITH DIFFERENT STARTER CULTURES ISMAILI MUHHAREM, MAKARIJOSKI BORCHE, PRESILSKI STEFCHE, TRAJCHEVSKI SASHO	58
STARTER CULTURES EFFECT ON pH AND SH DYNAMICS OF INOCULUM DURING FERMENTATION PERIOD OF PROBIOTIC YOGHURT ISMAILI MUHHAREM, MAKARIJOSKI BORCHE, PRESILSKI STEFCHE, TRAJCHEVSKI SASHO.....	59

STABILITY OF OIL FROM OILSEED RAPE WITH GARLIC UNDER VARIOUS CONDITIONS HRISTINA EFTINZIJOSKA, GORICA PAVLOVSKA	60
EVALUATION OF BACTERICIDAL ACTIVITY OF SELECTED WILD MACROFUNGI EXTRACTS AGAINST <i>ESCHERICHIA COLI</i> DANIELA NIKOLOVSKA NEDELKOSKA, TATJANA KALEVSKA, NATALIJA ATANASOVA-PANCEVSKA, MITKO KARADELEV, ZORA UZUNOSKA, DZOKO KUNGULOVSKI	61
COMPARISON OF THE RHEOLOGICAL CHARACTERISTICS OF BIO-FORTIFIED FLOUR OBTAINED FROM SOFT WHEAT VARIETIES TRESKA AND RADIKA Marija Menkinoska, Tatjana Blazhevska, Viktorija Stamatovska.....	62
HYGIENIC SANITATION IN THE DAIRY INDUSTRY IN THE PRODUCTION OF COW CHEESE AS A FACTOR FOR OBTAINING A HYGIENICALLY CORRECT PRODUCT ACCORDING TO THE EU STANDARDS FOR STANDARDIZATION AND CERTIFICATION Vangelica Jovanovska, Dimitra Jovanovska, Darko Veljanovski, Mila Arapchevska, Katerina Shambevskaa	63
EFFECT OF EXTENDED AGING UPON TEXTURAL ASPECTS OF TRADITIONAL BULGARIAN DRY-CURED HAM Dilyana Gradinarska, Daniela Mitreva, Katya Yalkova-Yorgova, Desislava Vlahova-Vangelova, Aco Kuzelov	64
INFLUENCE OF THE STERILIZATION PROCESS ON THE PHYSICOCHEMICAL AND NUTRITIONAL PROPERTIES OF MEAT VEGETABLE PATE Maria Momchilova, Dilyana Gradinarska, Dinko Yordanov, Todorka Petrova, Ivan Bakalov, Nikolay Penov, Nadezhda Petkova	65
GAS CHROMATOGRAPHY ANALYSIS OF OMEGA-3 FATTY ACIDS CONTENT IN FISH OIL SUPPLEMENTS Mila Arapcheska, Zehra Hajrulai – Musliu, Risto Uzunov, Jovanka Tuteska, Vangelica Jovanovska.....	66
RAW MILK MICROBIOLOGICAL QUALITY INFLUENCE ON PROTEIN CONTENT Dragan Ilievski, Biljana Trajkovska, Aleksandra Grozdanovska, Ljupche Kochoski	67
NON – DESTRUCTIVE STUDY OF ACID MILK COAGULATION Petya Boyanova, Petar Panayotov, Atanaska Bosakova-Ardenska, Vladimira Ganchovska.....	68
EVALUATION OF THE QUALITY OF RAW MILK FOR YOGURT PRODUCTION Tatjana Kalevska, Daniela Nikolovska Nedelkoska, Viktorija Stamatovska, Zora Uzunoska, Sasko Martinovski, Vezirka Jankuloska.....	69
QUANTITATIVE CHARACTERISTICS OF RABBIT HYBRIDS Darko Andronikov, Aco Kuzelov, Julijana Sazdova, Kiro Mojsov, Aco Janevski, Sonja Jordeva, Saska Golomeova	70
CHEMICAL COMPOSITION, ANTIRADICAL AND ANTIMICROBIAL ACTIVITY OF EXTRACTS AND COLD-PRESSED EDIBLE OILS FROM MACEDONIAN NUTTY FRUITS Sanja Kostadinović Velickovska, Violeta Dimovska, Fidanka Ilieva, Mihajlov Ljupco, Biljana Kovacevik	71
SOIL SCIENCE AND HYDROLOGY.....	72
THE CONTENT OF INORGANIC NITROGEN IN THE WATER FROM THE FIFTH CHANNEL NEAR THE CITY OF BITOLA Tatjana Blazhevska, Marija Menkinoska, Valentina Pavlova, Zora Uzunoska.....	74
VITICULTURE, ENOLOGY AND FRUIT PRODUCTION	76
SELECTION AND CHARACTERISATION OF WILD YEASTS OF WINERY INTEREST FROM DOG ROSE (<i>ROSA CANINA</i> L.) Dzoko Kungulovski, Natalija Atanasova-Pancevska, Marija Todorovska-Ivkovic, Ivan Kungulovski.....	78
PROCESS AND DEVICE FOR IN VIVO PREPARATION OF GRAPE /WINE/ FOODSTUFFS FROM GRAPE GEORGE MICHEV (NO PARTICIPATION)	79
YIELD AND MINERAL COMPOSITION OF GRAPEVINE AS AFFECTED BY MAGNESIUM AND IRON FOLIAR NUTRITION Hristina Poposka, Dusko Mukaetov, Dusko Nedelkovski	80
INVESTIGATION OF THE CORRELATIONS BETWEEN QUANTITATIVE TRAITS WHICH DETERMINE YIELD IN THE VINE CULTIVAR BOLGAR AND THE HYBRID COMBINATION BOLGAR X RUSSALKA Venelin Roychev, Dushko Nedelkovski	81
POTENTIAL AND POSSIBILITIES OF REBO - NEW GRAPEVINE VARIETY (<i>VITIS VINIFERA</i> L.) IN GROWING CONDITIONS IN REPUBLIC OF MACEDONIA Dushko Nedelkovski, Klime Beleski, Goran Milanov, Venelin Roychev, Violeta Dimovska.....	82

AGRO-BIOLOGICAL AND TECHNOLOGICAL CHARACTERISTICS OF RKATSITELI WINE GRAPE VARIETY, GROWN IN TIKVEŠ VINEYARDS KIRE PANOVSKI, VIOLETA DIMOVSKA, FIDANKA ILIEVA, DARKO MINDEV	83
VINEYARD IRRIGATION SYSTEMS CONTROLLED ONLINE THROUGH GMS MODULE EFREMCO NIKOLOV, DIMITRIJA ANGELKOV, VIOLETA DIMOVSKA, FIDANKA ILIEVA	84

IMPROVING THE DOMINANCE OF SURFACE DUST ABSORPTION VS. BULK DEPOSITION IN MOSS TISSUE CROSS BIO-INDICATION PROCESS OF METALS DEPOSITION IN ENVIRONMENT Biljana Balabanova^{1*}, Maja Lazarova², Blazo Boev²

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Abstract

Mosses have been used for biomonitoring in a number of different ways which may lead to rather different results, and some kind of classification seems necessary at this point. *Epigeic* mosses (growing on the ground) are preferred in the regional surveys in Europe. Trace elements may be absorbed on the moss from the atmosphere either as soluble chemical species in wet deposition or contained in particles from dry deposition. Part of the trace element content of particulates may eventually be released by weathering and reabsorbed by the moss. Whereas uptake efficiencies for particulate-bound trace elements are generally poorly known, Ions may be subject to active uptake into cells or attached on the moss surface by physical and chemical forces. Methods are available to distinguish between intracellular and surface-bound fractions of elements. Main problem with issue moss-biomonitoring are reveal as: a) transport of soluble compounds from the soil into moss tissue, particularly during periods with excessive soil/water contact. Although mosses do not have a root system, influence from this source cannot be disregarded, in particular in areas with low atmospheric deposition and b) windblown mineral dust from local soil.

As far as the surface bound fraction is concerned, little is known about the binding mechanisms, but the fact that different metals show rather large differences in their retention capacity, indicates that both simple cation exchange on negative surface charges and complex formation with ligands on the moss surface are involved. Laboratory analysis using scanning electron microscopy (emission SEM, TESCAN VEGA3) has been involved for determination of the dry deposition occurred within two species (*Homalothecium lutescens* and *Homalothecium sericeum*) from the genus *Homalothecium*.

Key words: moss bio-indication, *Homalothecium lutescens*, *Homalothecium sericeum*, heavy metals, air deposition

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